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VARIATION IN THE CUBAN LIZARD
LEIOCEPHALUS RAVICEPS COPE

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Of the five species of the genus *Leiocephalus* inhabiting Cuba, the least known is *Leiocephalus raviceps* Cope. Described by Cope in 1862 on the basis of specimens collected by the botanist Charles Wright in "eastern Cuba," *L. raviceps* was unknown to Gundlach except from the original description (Gundlach, 1875:354; 1880:34). Barbour (1914:301) followed Boulenger in regarding *L. raviceps* as a synonym of *L. vittatus* (= *L. cubensis*), but later he and Ramsden (1919:173) followed Stejneger (1917:53) in affirming the distinctness of the species, although they were not certain that it was Cuban. These two authors assumed that Wright's types came most probably from the Sierra de Yateras (probably owing to Gundlach's (1880) comment), but Ramsden was unable to find the lizard in that immediate area. This is not surprising, when it is known that *L. raviceps* is an inhabitant of the most xeric areas in Cuba, and is not known to occur in mesic areas or forest.

Cochran (1934:39) apparently was the first to report *L. raviceps* from a definite locality in Cuba; she cited specimens from four localities in the vicinity of Guantánamo Bay in Oriente, and erroneously (see Schwartz, 1959:110-11) from the Doce Leguas keys off Camagüey Province. Alayo (1951:109; 1955:16) reported the species from La Socapa, on the west side of the Bahía de Santiago, and from Laguna de Baconao on the coast road between Santiago de Cuba and Guantánamo. Thus, *L. raviceps* is now known from the region of the Bahía de Santiago east to the Bahía de Guantánamo; the only record of the species to the west of the Bahía de Santiago is Alayo's specimen from La Socapa, whereas the only record from east



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of the Bahía de Guantánamo is that of Cochran from Boquerón.

During the summer of 1959, specimens of *L. raviceps* were collected at various localities on the south Oriente coast by myself, Ronald F. Klinikowski, and Barton L. Smith. During the Christmas holiday season of 1959, a new series was taken in the Sierra de Purial by myself and James R. Talada. All these collections were made under a National Science Foundation research grant. For the first time, ample series of specimens from various localities are available. It is not surprising that two subspecies are readily distinguishable in the material from Oriente. In addition to these fresh specimens, I have had the opportunity to examine the cotypes of *L. raviceps* in the U. S. National Museum, as well as a small series collected by Thomas M. Uzzell, Jr., and Richard Etheridge at the U. S. Naval Base on the east side of Guantánamo Bay, and a single specimen from Baracoa. I wish to thank Doris M. Cochran, Norman E. Hartweg, and Miguel L. Jaime García for permission to examine specimens respectively in the U. S. National Museum (USNM), Museum of Zoology, University of Michigan (UMMZ), and the Museo y Biblioteca de Zoología de la Habana (MBZH). Knowing my interest in the species, Messrs. Uzzell and Etheridge kindly allowed me to examine their very pertinent material. The illustrations are the work of Ronald F. Klinikowski; his work on my behalf is sponsored by a National Science Undergraduate Research Participation grant.

In addition to the specimens from Oriente, we collected a series of *L. raviceps* on the northern coast of Matanzas Province near Varadero. These specimens are the first extra-Oriente lizards of this species, and they too represent a distinct new form; a distance of some 690 kilometers separates this population from the nearest known Oriente population of *L. raviceps*.

In order to establish which of the three populations of *L. raviceps* best agrees with Cope's concept of the species, I have examined the seven cotypes of the species (USNM 4162). This series consists of two adult males and five adult females, all in fair condition considering their preservation for almost a century. Cope's (*op. cit.*:183) description of coloration and pattern are a composite of the series; he stated, "Above yellowish brown, with many short, narrow, black longitudinal lines, which are something arranged as a double series of dorsal

spots." In general, the males have the dorsal short lines (dashes), whereas the females have a double series of dorsal spots. This characterization of the cotypes, along with Cope's comment "Top of head light yellowish brown," is sufficient to restrict it to the population of *L. raviceps* which occurs east of the Bahía de Guantánamo, *i.e.*, between Guantánamo and Cajobabo, and in the Sierra de Purial. The remainder of Cope's description is consonant with the allocation of the cotypes with this population, and examination of the series of cotypes confirms this arrangement. Comparison of the types with fresh material from this region, and with specimens of the new dark race from farther west along the Oriente coast, shows that this area is occupied by the nominate form.

Only Gundlach (1880:34) has attempted to restrict the type locality of *L. raviceps* Cope; this Cuban herpetologist restricted it to "the mountains near Guantánamo, Oriente." This general locality was not unlikely, since it is known that Wright collected in this area. Repeated search for *raviceps* in the mesic Sierra de Yateras by herpetologists yielded no specimens. However, the species does occur in the very different and xeric Sierra de la Vela to the southeast of Guantánamo on the east of the Bahía de Guantánamo. Thus if Gundlach's type locality restriction of "the mountains near Guantánamo" is understood to refer to the Sierra de la Vela or other of the dry coastal ranges, this locality may be regarded as correct.

I have seen no specimens from Guantánamo itself; I suspect that *raviceps* occurs to the south of that city, on the west side of the Bahía, in the xeric and *Opuntia*-studded plains which occur close to the city itself. We collected one specimen near Caimanera. To the southeast of Guantánamo, between the city and the U. S. Naval Base, no *raviceps* were collected, and in general this area now, at least, appears unsuitable. However, as one approaches the Naval Base, the typical xeric features of the flora and landscape appear, and the species should occur there, as it does in the Sierra de la Vela.

The population of *L. raviceps* between the Bahía de Santiago and the Bahía de Guantánamo differs in coloration, pattern, and certain features of scutellation from that to the east; for this western population I propose the name, in honor of Thomas

M. Uzzell, Jr., who collected the first fresh specimens of *L. raviceps* which I had seen, as:

***Leiocephalus raviceps uzzelli*, new subspecies**

Type: American Museum of Natural History (AMNH) 79321, from 18.2 kilometers east of Siboney, Oriente Province, Cuba, taken 25 July 1959; one of a series obtained by Ronald F. Klinikowski, Albert Schwartz, and Barton L. Smith. Original number 7867. See Fig. 1.

Paratypes: AMNH 79310–20, 79322–35, same data as type.

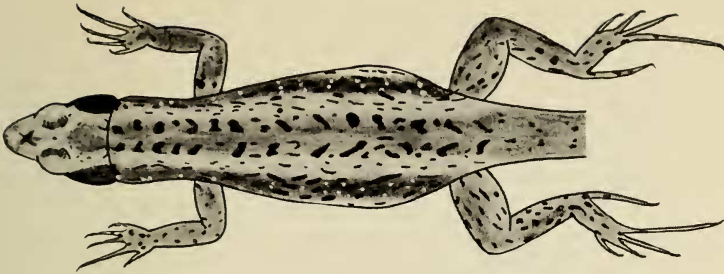
Specimens examined and not designated as paratypes: AMNH 79336–40, 26.6 km E Siboney; AMNH 79341–45, Laguna de Baconao, 21.8 mi E Siboney; AMNH 79346, 2 mi N Caimanera.

Distribution: The southern Oriente coast from the Bahía de Santiago to the Bahía de Guantánamo.

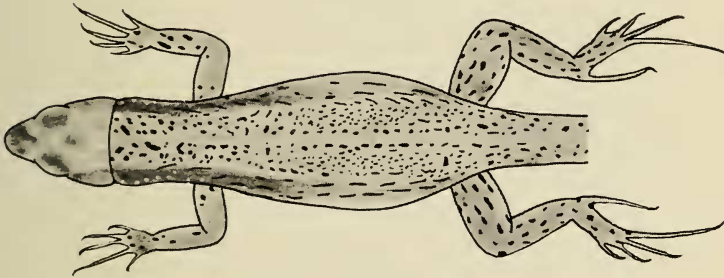
Diagnosis: A subspecies of *L. raviceps* characterized by dark tan coloration with sharply differentiated darker brown lateral fields, relatively prominent dark brown to black dorsal dashes or paired blotches, usually well defined postorbital blotch and more often incomplete than complete supraorbital semicircles.

Description of type: An adult male, with the following measurements (in millimeters): snout–vent length 65; tail 96, complete; snout to anterior border of tympanic opening 13.7; head width 11.4; supraocular scales 7/7; loreals 3; temporals 9; enlarged auricular scales 4/4; median head scales 4; prefrontal row complete 3 scales; frontoparietal row complete 5 scales; parietals in contact; semicircles incomplete; dorsal crest scales occiput to vent 65; dorsal crest scales occiput to axilla 27; scales around half body at midbody 33; fourth toe subdigital tricarinate scales 25/26.

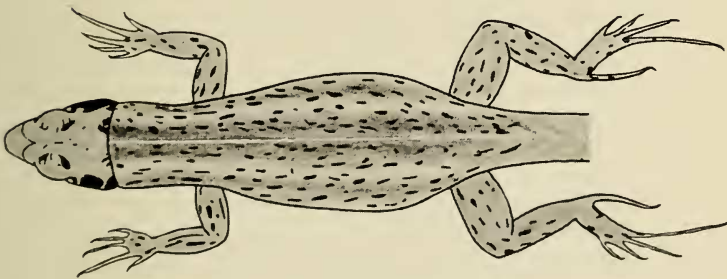
Coloration: The dorsal coloration in life is yellowish tan. There is a darker brown lateral field, which in life contained scattered yellow and red scales, extending from the eye to the groin. The dorsal surface of the head is likewise yellowish tan with some of the scales, especially the inner margins of the semicircles, outlined by black. The dorsum between the lateral fields shows a median zone which is set off laterally by a longitudinal paler zone. Ventral to the lateral field there is a longitudinal pale whitish band which extends from above the tympanic opening to the groin; this line is outlined below by a faintly gray longitudinal band, which merges gradually into the pale gray venter. The dorsal crest scales are not set off by their coloration from the remainder of the median dorsal tan band. The median zone includes a series of about 13 more or less triangular dark brown blotches, their apices pointed posteromedially; the anterior blotches are darker and more rectangular than the posterior ones. There are a few short, dark longitudinal dashes between the blotches. The next adjacent longitudinal zones, which have a paler ground color, are marked with scattered longitudinal dashes, involving two to three scales. The lateral fields are marked with diagonal dark dashes, which are prominent on the sides and somewhat fainter on the neck; these dashes continue more ventrally between the limbs to midway between the limb in-



1.



2.



3.

FIG. 1-3

sections. Scattered light scales in and below the lateral fields were yellow in life; these light scales continue onto the abdomen as a series of transverse rows of white dots against the pale gray of the abdomen. The dorsal surfaces of the limbs are tan; the hindlimbs have a combination of short

brown dashes and scattered cream colored scales on their dorsal surfaces, and these markings continue onto the dorsal surface of the foot. The post-orbital blotch is represented by a slightly gray area on the cheek, with a few brownish scales intermingled with the gray. The upper labials are suffused with tan; the lower labials have deeper tan pigment along the infralabial sutures, giving the lower lip a somewhat mottled appearance. Three white bands radiate ventrally from the eye, the posterior two separated by a vertical black bar which extends ventrally from the middle of the eye. The entire ventral surface is pale gray, and the throat is immaculate. The underside of the hindlimbs and the posterior third of the abdomen have scattered brown dots; these dots extend as well onto the basal portion and sides of the tail. In addition, cream colored scales occur on the underside of the hindlimbs and tail. Thus these members are pale gray with scattered brown spots, and more abundant cream colored spots.

Variation: In snout-vent length, 21 adult male *L. r. uzzelli* average 63.2 mm (55-71); 9 adult females average 48.1 (45-53). Dorsal crest scales (combined data for both sexes) in occiput-vent length average 63.4 (56-69), and dorsal crest scales in occiput-axilla average 26.0 (23-31). One half scales at midbody average 32.4 (29-36), loreals 3.3 (2-5); temporals, 11.0 (8-13), subdigital fourth toe tricarinate scales 24.3 (22-28). The parietals are always in contact, and the supraorbital semicircles are more often incomplete (53%) than not. The supraoculars are most often 7/7 (68%), with 6/6 occurring as the next most frequent (13%) category. Variation in this character includes in addition counts of 5/5 (3%), 5/6 (6%), 6/7 (6%), and 7/8 (3%). If all counts which include at least 7 supraoculars (at least unilaterally) are combined, 77% of the population is differentiated from the 23% which have counts ranging from 5/5 to 6/6.

Since there is a certain amount of sexual dimorphism in pattern, the two sexes will be discussed separately. Males can be distinguished from females in that the former have two pairs of enlarged postanal scales. All males are relatively darkly pigmented in life, with a conspicuous lateral field as compared with the paler *r. raviceps*. Some males demonstrate a yellowish suffusion of the head scales in life, but in general this has disappeared in preservative; the more common condition in *uzzelli* is the unicolored tan head scales. The dorsal pattern is like that described for the type in most cases—a series of paired dark rectangular or triangular blotches in the median tan zone. Some specimens lack these blotches and have them supplanted by a uniform series of longitudinal dashes or even dark dots; any combination of these patterns may occur on the same individual. The lateral fields are always dark and prominent with bold black diagonal dashes. The postorbital blotch varies in intensity, but the type is unusual in the faint pigmentation of the postorbital area; usually the cheek is covered by a heavy black blotch, or there is at least some black pigment in this area, and the "blotch" may appear as a hollow or open-ended rectangle, brown to tan centrally; the blotch is, even at its most reduced, usually better defined and more prominent than it is in *r. ravi-*

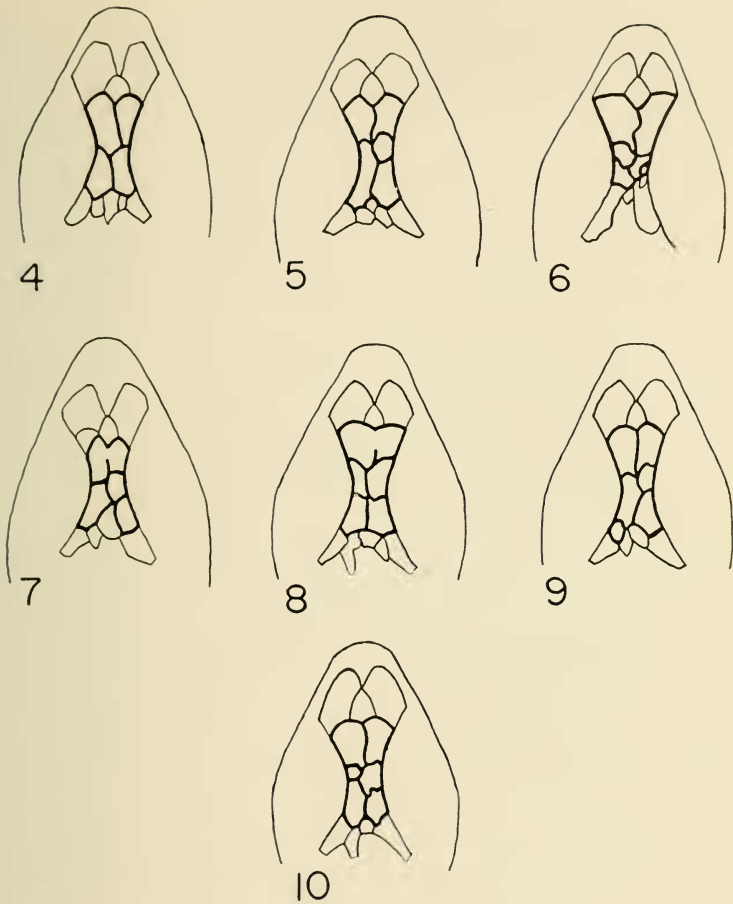


FIG. 4-10

ceps. Unregenerated tails have a pattern of about 17 dorsal chevrons, their apices pointed posteriorly; the ground color of the tail is faintly pinkish in life, and this serves to distinguish these lizards in the field. The throat usually is immaculate, varying in color from white to very pale lavender to gray, with occasional clear cream colored scales scattered on its margins. Some males show a few gray lines or dots on the throat; this gray pigmentation occurs in juveniles more regularly than adults, but it appears not to be strictly ontogenetic in nature. The undersides of the hindlimbs, posterior abdomen, and basal portion of the tail are dotted with dark brown as are these members in the type.

The females present the same dark appearance as the males, but are

more distinctly lined longitudinally (*cf.* Schwartz, *op. cit.*, sexual dimorphism in *L. cubensis* and *L. stictigaster*). The female pattern is an intensification of that described for the males—the paired dorsal blotches (only one female shows any additional dorsal pigmentation in the form of dark dashes in the median zone). The sides have the diagonal dark dashes which may be somewhat inconspicuous due to the dark coloration of the lateral fields. The hindlimbs have dorsal dark dashes, but these may be obscure. The postorbital blotch is usually demonstrated by a slightly darker brown area on the cheek. The females, in contrast to the males, almost always have dark gray dots, often aligned into longitudinal rows, on the throat, and usually lack any dark dots on the underside of the hindlimbs, although the belly usually has brown dots on its posterior third. Both sexes have the pale facial markings described for the type, but they are more clearly expressed in the females than the males. Usually there are but two, rather than three, light subocular areas, the anteriormost being obscured by the deposition of tan pigment, and the posterior two being separated by a definite vertical black bar. The juvenile males resemble the females in pattern and pigmentation very closely.

All specimens but six have four median head scales (see Fig. 4); five specimens have five median head scales (see Fig. 5) and one has six (see Fig. 6). This condition of five and six, rather than four, scales is caused either by the unequal transverse division of one of a pair of scutes or by the unequal division of both members of a pair.

Comparisons: *L. r. uzzelli* differs from its relative, *L. r. raviceps*, to the east in both coloration and scalation, as follows: Although both races are tan dorsally, *uzzelli* is by far the darker of the two; *raviceps* has a distinctly faded or "washed out" appearance (see Fig. 2), whereas *uzzelli* is darker. Male *uzzelli* have the lateral fields very dark, and the dorsum is marked either with dark brown or black dashes, often organized into two series of paired black or brown blotches on either side of the dorsal midline. This feature seems to be a retention into the adult of the juvenile (and female) blotched pattern. Even if the dorsal pattern is composed of dashes, there are at least two pairs of blotches in the nuchal area, and thus at times the subspecies *uzzelli* may superficially resemble *L. m. macropus*. The postorbital blotch is usually demonstrated, in contrast to the condition in *raviceps*, and when best expressed, is black and outlined anteriorly by a light line extending ventrally from the eye onto the posterior supralabials, and extends posteriorly to the tympanic opening. Ventrally, males of the two subspecies are much alike, except that *uzzelli* males often have a few gray lines or dots on the throat, and the undersurface of the hindlimbs, basal portion of the tail and posterior abdomen are much more heavily and profusely marked with dark brown dots. In contrast to the dull face and labial markings of *raviceps*, *uzzelli* has distinct facial markings of dark brown or black consisting of three lines (one just below the canthus rostralis, another from the anterior corner of the eye, and the third from the posterior half of the eye) which encloses three light areas and extend onto the supralabials. The infralabials are regularly mottled white

and dark brown to tan. Female *uzzelli* resemble female *raviceps* except that the latter females are much paler and appear faded, and lack the female *uzzelli* face pattern of a single vertical black line through the center of the eye. The gray throat markings of female *uzzelli* are more pronounced and darker than those of *raviceps*, and one female demonstrates brown dots on the underside of the hindlimbs.

As noted above, the two races differ in general coloration, *raviceps* being more distinctly yellowish-tan than *uzzelli*. The yellowish suffusion on the head of *raviceps* is not shown so distinctly in *uzzelli*, although occasional specimens do show it. *L. r. uzzelli* shows yellow or red dots (lateral scales) on the sides and in the area of the shoulder, and apparently lacks the green lateral scales of *raviceps*.

Males of the two subspecies do not differ in snout-vent length; 23 adult male *raviceps* average 66.5 mm (61-71). Eleven adult females average 54.5 (52-57); it is possible that the females of *uzzelli* are consistently smaller than those of *raviceps*, but there are too few *uzzelli* females available to be certain. At present the females of the two races can almost be separated by size alone (largest female *uzzelli* 53 mm, smallest female *raviceps* 52 mm). Means and extremes of scale characters of *raviceps* are: dorsal crest scales in occiput-vent length 64.2 (55-74); dorsal crest scales in occiput-axilla length 27.5 (22-32); one half scales at midbody 32.3 (27-36); loreals 3.6 (2-5); temporals 11.6 (9-15). None of these counts are significantly different from those of *uzzelli*. However, tricarinate subdigital fourth toe scales 25.5 (21-30) in *raviceps*; inspection of Fig. 11 indicates that this count is significantly higher than that of *uzzelli*. Both races usually have four median head scales; only one *r. raviceps* examined had five median head scales. Both races usually have 7/7 supraoculars; 71% of *r. raviceps* have 7 or 8 supraoculars at least unilaterally. Parietal contact occurs in 95% of the *r. raviceps*; the semicircles are complete in 81% of the lizards. This is in contrast to *uzzelli*, in which 47% of the specimens have complete semicircles; the difference is significant.

Remarks: The south Oriente coast lies in the rain shadow of the Sierra Maestran system; specifically, between the Bahía de Santiago and the Bahía de Guantánamo, the range involved (which is considered as part of the Sierra Maestra by Marrero, 1951: 584) is the Cordillera de la Gran Piedra. North and east of the Guantánamo Basin are the Sierra del Guaso, the Sierra de Maquey and the Sierra de la Vela. The extensive Sierra de Purial (Las Cuchillas) limits the very narrow coastal area from east of Guantánamo to Cabo Maisí. Marrero (*op. cit.*: 658) described the coast from Guantánamo to Cabo Maisí in the following accurate terms: "The southern coast of Oriente, from Guantánamo eastward, is in reality a desert, with infrequent rains during the entire year and a xerophytic vegetation, in which cacti predominate, interrupted only by the gallery vegetation at the base of palms, together with the rare rivers which descend to the ocean." Later, Marrero (p. 659) mentioned the botanist Victorin's appellation for part of this region as the "inferno of Maisí"; such descriptions are verbally adequate to describe the intense heat, sandy and rocky

soils, and xerophytic plants which characterize this coastal strip. The coast from Santiago to Guantánamo, while nonetheless hot and xeric, is less so than the Guantánamo area, and supports occasional stands of deciduous trees, mangroves, and palms, along with some low herbaceous cover. *L. raviceps* is widespread between Guantánamo and Cabo Maisí, but appears to be less so and more restricted to the niche of sandy soil and *Opuntia* between Santiago and Guantánamo. However, in this latter region, it has been found sparingly in other habitats, which are invariably dry. For example, at Laguna de Baconao, we took both *r. uzzelli* and *m. macropus* in close proximity to one another, at the edge of the mangrove border of the lake. However, *macropus* occurred within the shady forest on mud and moist ground, whereas *uzzelli* shunned this cooler habitat in preference to the dry and extremely hot hillsides.

Although the single specimen of *L. raviceps* from Baracoa (MBZH 136) is the only individual from the north coast of Oriente, and is separated from the south coast *r. raviceps* population by the Sierra de Purial, this lizard does not differ in any way from the southern coastal specimens of *r. raviceps*. It has the herringbone dorsal pattern which occurs in south coast *r. raviceps* and not in *uzzelli*. Although we collected *Leiocephalus* in the Baracoa area, no *raviceps* were taken. The series of lizards from the Sierra de Purial (AMNH 83791-806, from 4.6 mi N Cajobabo) shows that in extreme eastern Cuba the distribution of this lizard may not be completely coastal. Under proper conditions it may invade non-coastal montane areas, provided that the soil and moisture conditions are suitable. At this Cajobabo locality, the lizards were taken along the Cajobabo-Baracoa road in a dry and sunny road cut, as they ran about on the broken shale fragments where there was little or no plant cover. Such relatively isolated populations between the south coast and Baracoa may well maintain genetic continuity between the populations of the two coasts. On the other hand, *r. raviceps* may continue to Baracoa via a more or less continuous population from the south coast around Cabo Maisí and thence to Baracoa.

The absence of *L. raviceps* west of the Bahía de Santiago is puzzling; as noted previously, the only record for the species in this area is at La Socapa, which is on the west side of the bay itself. The common *Leiocephalus* on the coast south of the Sierra Maestra is *L. macropus*; there are no obvious differences in the vegetation or substrate of this coastal strip as compared to that of the Santiago-Guantánamo strip except the absence of the sand-*Opuntia* niche. It is possible that *raviceps* and *macropus* are competitors, and that the former has been unable to become established to the west of Santiago; another possibility is that the western coast is too moist for this species and the apparent absence of sandy soils and *Opuntia* is a limiting factor.

The completely unexpected occurrence of *L. raviceps* in Matanzas Province is indeed surprising. The series of 22 lizards from two localities near Varadero is very different in several features from *L. raviceps* in

Oriente, and accordingly, in honor of Ronald F. Klinikowski, the discoverer of this western population, I propose the name:

Leiocephalus raviceps klinikowskii, new subspecies

Type: AMNH 83326, adult male, from 4.5 kilometers southwest of Varadero, Mantanzas Province, Cuba, taken 8 September 1959, one of a series collected by Ronald F. Klinikowski, Albert Schwartz, and Barton L. Smith. Original No. 8528. See Fig. 3.

Paratypes: AMNH 83327-46, same data as type; AMNH 83347, 5.5 kilometers southwest of Varadero, Mantanzas, 8 September 1959, R. F. Klinikowski.

Distribution: Known only from the coast southwest of Varadero in Matanzas Province, Cuba.

Diagnosis: A subspecies of *L. raviceps* characterized by very pale yellowish tan dorsal coloration, lateral fields very inconspicuous and hardly differentiated from ground color, dorsum with prominent black dorsal dashes, poorly defined postorbital spot, usually 5 or 6 median head scales and 6/6 supraoculars, and high number of dorsal crest scales and scales around midbody.

Description of type: An adult male, with the following measurements in mm and counts: snout-vent length 69; tail 74, distal one third regenerated; snout to anterior border of tympanic opening 14.4; head width 11.8; supraocular scales 6/6; loreals 5; temporals 16; enlarged auricular scales 4/4; median head scales 6; prefrontal row complete 3 scales; frontoparietal row complete 5 scales; parietals in contact; semicircles complete; dorsal crest scales occiput to vent 62; dorsal crest scales occiput to axilla 27; scales around one half body at midbody 35; fourth toe subdigital tricarinate scales 24/26.

Coloration: The dorsal coloration in life is pale yellowish-tan, almost sand colored, with the dorsal crest scales immaculate pale yellow. There is little evidence of longitudinal zonation and the lateral fields are not appreciably darker than the dorsum itself, nor are they separated from the ventral gray coloration by an additional band of tan; the effect laterally is a gradual blending of the dorsal yellowish-tan coloration into the gray of the abdomen. The dorsal surface of the head is yellowish-tan with black pigment stippled over the head scutes, especially the prefrontals, posterior supraoculars, and the parietals and interparietal. The entire dorsum and lateral field area is marked with short black longitudinally aligned dashes (see Fig. 3), which become obscure on the neck and form two very faint pairs of nuchal blotches which are barely discernible. Cream colored isolated scales on the sides extend onto the abdomen in a series of five parallel rows, with additional cream scales on the abdomen anterior to the hindlimbs. Some of the tan scales in the lateral field area were orange basally in life. The forelimbs are mottled tan dorsally and the fingers are immaculate pale tan, giving the lizard a distinctly pale fingered appearance. The hindlimbs show short black longitudinal dashes on all sections, but they are arranged as spots on the foot itself; there are

additional light scales on the dorsal surface of the hindlimbs. The post-orbital blotch is represented by a vertical black bar behind the eye, and a darker irregular blotch posterior to this bar; the cheek itself is tan. Three gray lines radiate from the eye, one below the canthus rostralis, another from the anterior corner of the eye, and a third from the center of the eye; these extend to the supralabials, and are continued on the infralabial sutures. The entire ventral surface is gray, with a darker gray suffused area across the chin, another on the throat, and a few scattered cream scales on the throat. The undersurface of the hindlimbs is almost white, again with a few light tan dots scattered over the shank; darker dots occur on the posterior abdomen and on the underside of the tail. The unregenerated portion of the tail shows about six dull gray chevrons with the apices directed posteriorly; the ground color of the tail is dull reddish-tan in life.

Variation: In snout-vent length, four adult male *L. r. klinikowskii* average 58.5 mm (53-69); eight adult females average 51.9 mm (46-59). Dorsal crest scales (combined data for both sexes) in occiput-vent length average 66.2 (61-71), and dorsal crest scales in occiput-axilla length average 27.0 (24-29). One half scales at midbody average 35.3 (32-39), loreals 4.2 (4-5), temporals 13.9 (11-16), subdigital fourth toe tricarinata scales 25.9 (21-27). The parietals are more often (86%) in contact than not, and the supraorbital semicircles are always complete.

Of the three paratypic males, one resembles the type in dorsal pattern; the remaining two individuals have the dorsal zonation somewhat more apparent, and still retain some remnants of the juvenile male paired blotch pattern. All have pale yellowish-tan dorsa, very pale fingers, immaculate yellow dorsal crest scales, chevrons (about 18) on the complete tails, rather diffuse gray postorbital blotches, black stippling on the head scutes, and dark facial and labial markings. The three paratypic males lack brown dots on the undersurface of the hindlimbs, but show them on the underside of the base of the tail. One has a completely immaculate throat, and the remaining two have a gray suffusion and scattered diffuse gray dots. The eight adult females are much as the females of *raviceps* and *uzzelli* except that they are much paler; all but one show the paired female blotches and dashes in the lateral fields. The single exception is unusually gray and has dashes in the lateral field area and very pale gray dashes dorsally. All females have black on the head scutes, postorbital blotches absent or if present diffuse and gray, and a contrasting face pattern of gray or black lines. The inter-infralabial sutures are distinctly black, and the throat always has some indication of gray dots or dashes. The underside of the hindlimbs is usually immaculate white, but a few individuals have indications of very light tan dots. The dark brown belly dots are present and rather extensive.

There are 10 juvenile female paratypes ranging in snout-vent lengths from 26 to 44 mm. These show the same pattern as the adult females and differ only in the more definite dark gray chin and throat markings.

Nineteen of the 22 specimens of *klinikowskii* have five or six median

head scales; variation in this feature is shown in Figs. 4 to 10. Only two individuals have four median head scales (Figs. 4 and 7). Fig. 7 shows that, although there are only four head scales in this case, anterior continuation of the incipient median suture would convert this pattern to five median scales. The other lizard with four median head scales differs in no wise from four-head-scaled individuals of *raviceps* and *uzzelli* (Fig. 4). Thus almost 100% of *linikowskii* have either 5 or 6 median head scales, at least incipiently.

Variation in number of supraoculars is great; 6/6 occurs in the most individuals (12 lizards, 55%), and 6/7 in six lizards (27%). Only two (9%) *linikowskii* have 7/7 supraoculars, in contrast to 68% in *uzzelli* and 44% in *raviceps*. Other counts in *linikowskii* are 6/8 and 7/8 (one individual each). Counts of more than 6/6 arise in the following three ways: (1) a supraocular, usually the sixth, is divided longitudinally so that two scales occupy the area of one scale; (2) the sixth is replaced by two scales transversely, thus giving the usual 7 supraoculars of *raviceps* and *uzzelli*; (3) a small supraocular is added anteriorly from fusion or enlargement of one of the semicircle scales. The occurrence of six supraoculars at least unilaterally is shown in all but one specimen (which has 7/8) of *linikowskii*.

Comparisons: *L. r. klinikowskii* differs from both *raviceps* and *uzzelli* in its very pale coloration, light to no ventral spotting on the hindlimbs, usually very inconspicuous lateral fields, relatively faint postorbital blotch, pale fingers, and immaculate yellow dorsal crest scales. In scalation, the Matanzas race differs in usually 6/6 supraoculars, although a relatively high percentage (32%) of *raviceps* has this number of supraocular scales.

From *uzzelli*, *linikowskii* differs in having the semicircles always complete, whereas the former has the semicircles more often incomplete. Inspection of Fig. 11 shows that *linikowskii* differs significantly from *uzzelli* in number of dorsal crest scales in occiput-vent length, from *raviceps* and *uzzelli* in number of one half midbody scales, and from *uzzelli* in number of fourth toe scales.

In size, *linikowskii* males average smaller than males of both the other races; this is probably an artifact of the small size of the sample of male *linikowskii*. Female *linikowskii* reach a larger size than females of the other races, although the average of the series is intermediate between that of *raviceps* and *uzzelli*. It is especially interesting that, despite the apparent great hiatus between the known range of *linikowskii* and *uzzelli*, the scale differences between these two races are not more striking.

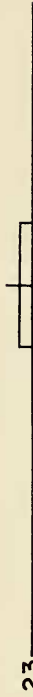
Remarks: The habitat of *L. r. klinikowskii* is apparently the sandy beaches of Punta de Hicacos. It is probable that the race has a wider distribution than presently known; since much of the beach area of the Varadero area is now converted to recreational use, collecting must be carried on at less populated areas. The type locality is a stretch of open beach, with almost no herbaceous cover except *Ipomea* and scattered tufts of grass, separated from the Matanzas-Varadero highway (Via Blanca) by a stand of introduced *Casuarina*. The single lizard from 5.5 kilometers

DORSAL CREST SCALES

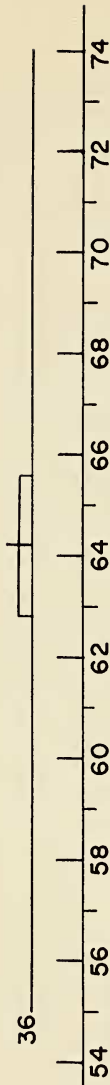
KLINIKOWSKII



UZZELLI



RAVICEPS



1/2 MIDBODY SCALES

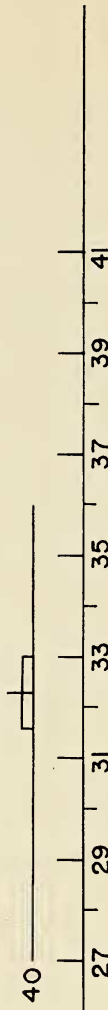
KLINIKOWSKII



UZZELLI



RAVICEPS



FOURTH TOE SCALES

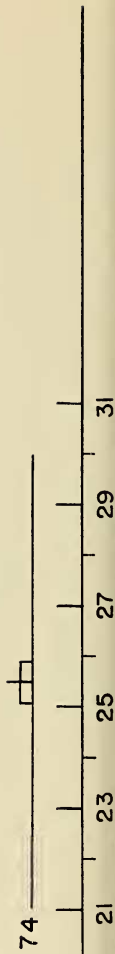
KLINIKOWSKII



UZZELLI



RAVICEPS



southwest of Varadero was taken on sandy soil in rather dense grassy cover. The lizards were all captured by hand; this was a relatively simple task since there was such little cover. They sought refuge in land-crab burrows, and when especially hard pressed, would bury themselves in the sand much in the same manner of *Uma* and would quickly disappear from view.

I suspect that other populations of *L. raviceps* remain to be discovered. Sandy areas on the north coast from Matanzas to northern Oriente may well harbor disjunct populations of this lizard. The only other comparable area which I have visited on the north coast is Playa Santa Lucía in eastern Camagüey; no *raviceps* were collected there. However, it is interesting that the type locality of *L. r. klinikowskii* was visited in the summer of 1958, and these lizards were not observed at this or any other collecting locality along the Punta de Hicacos' north coast. Visits in 1958 and 1959 to a locality 13 kilometers northeast of Matanzas did not yield specimens of *L. raviceps*, and I doubt that the species occurs in this immediate region; here there is no beach as such, the shore having a formation of *diente de perro* limestone with sandy dunes behind the limestone, covered with dense herbaceous and woody vegetation which is apparently unsuitable for *L. r. klinikowskii*.

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EXPLANATION OF FIGURES

Fig. 1.—*Leiocephalus r. uzzelli*, new subspecies, dorsal view of type (AMNH 79321).

Fig. 2.—*Leiocephalus r. raviceps*, dorsal view (AMNH 79350).

Fig. 3.—*Leiocephalus r. klinikowskii*, new subspecies, dorsal view of type (AMNH 83326).

Figs. 4 to 10.—Dorsal view of median head scales of *L. raviceps* showing variation in number from four to six scales; figures from specimens as follows: 4. AMNH 79314; 5. AMNH 83327; 6. AMNH 79310; 7. AMNH 83328; 8. AMNH 83331; 9. AMNH 83333; 10. AMNH 83326.

Fig. 11.—Counts of dorsal crest scales in occiput-vent length, scales around one half of body at midbody, and subdigital tricarinate scales on fourth toe in three Cuban subspecies of *Leiocephalus raviceps*. Horizontal line indicates range of variation in sample; vertical line, the mean; hollow rectangles indicate two standard errors on each side of the mean. If rectangles on two sets of data do not overlap, a statistically significant difference between the means is suggested. Sizes of individual samples are given to the left of each line. Higher number of individual counts in fourth toe scales is due to counting the number of subdigital scales on the fourth toe of both the right and left foot.